Claims

What is claimed is:

1. An electronic interconnect, comprising:

a bond pad, the bond pad consisting essentially of aluminum and copper and configured for use in semiconductor electronic devices to couple a bond wire to an integrated circuit package; and

an oxide coating residing on at least a topmost surface of the bond pad, the oxide coating consisting essentially of aluminum, copper, and oxygen.

2. The electronic interconnect of claim 1, wherein the oxide coating is between 5 nanometers and 1 micrometer in thickness.

3. The electronic interconnect of claim 1, wherein the oxide coating is between 5 nanometers and 50 nanometers in thickness.

4. The electronic interconnect of claim 1, wherein the oxide essentially has a chemical composition of $CuAlO_2$.

5. The electronic interconnect of claim 1, wherein the bond pad and oxide coating also contain silicon.

6. A method of fabricating aluminum copper bond pads, comprising:

placing an electronic device having aluminum-copper bond pads into an atmospheric oven;

baking the electronic device at a temperature of between 50°C and 700°C;

maintaining the temperature of the atmospheric oven containing the electronic device for at least 5 minutes;

oxidizing at least a topmost surface of the aluminum copper bond pads;

removing the electronic device from the atmospheric oven; and

cooling the electronic device for at least 10 minutes.

7. The method of claim 6, wherein the temperature is between 300°C and 500°C.

8. The method of claim 6, wherein the temperature is between 340°C and 360°C.

9. The method of claim 6, wherein the temperature of the oven containing the electronic device is maintained for between 7 minutes and 10 minutes.

10. The method of claim 6, wherein gaseous oxygen is injected into the atmospheric oven.

11. The method of claim 6, wherein steam is injected into the atmospheric oven.

12. The method of claim 11, wherein the steam is supersaturated.

13. The method of claim 6, wherein the bond pads also contain silicon.

14. An electronic interconnect which comprises:

an aluminum-copper bond pad; and

an oxide coating residing on at least a topmost surface of the bond pad, the oxide coating formed by baking the bond pad in an atmospheric oven at less than 500°C, the oxide coating further consisting of essentially aluminum, copper, and oxygen.

15. The electronic interconnect of claim 15, wherein the oxide coating also contains silicon.

16. An electronic interconnect, comprising:

a bond pad, the bond pad consisting essentially of aluminum, copper, and silicon and configured for use in semiconductor electronic devices to couple a bond wire to an integrated circuit package; and

an oxide coating residing on at least a topmost surface of the bond pad, the oxide coating consisting essentially of aluminum, copper, silicon, and oxygen.

17. The electronic interconnect of claim 16, wherein the oxide coating is between 5 nanometers and 1 micrometer in thickness.

18. The electronic interconnect of claim 16, wherein the oxide coating is between 5 nanometers and 50 nanometers in thickness.